J-U-B ENGINEERS, Inc.
Engineers•Surveyors •Planners
7825 Meadowlark Way
Coeur d'Alene, ID 83815
(208) 762-8787
Fax: (208) 762-9797

Date: March 11, 2010

To: City of Post Falls: Terry Werner, Public Services Director; Michael Neher, Environmental Coordinator

From: Paul Klatt, P.E.

Subject: Post Falls' Phosphorus Waste Load Allocation Needs for Future Population

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Per your request, I have reviewed the population projections and flow trends from the public sources cited herein in order to evaluate the City of Post Falls' need for total phosphorus waste load allocation (WLA) for the next 20 years. From this data, I believe that the City is justified in requesting an increase from the 1.50 pounds per day (ppd) that is currently assumed in Portland State University's Final Scenarios Report (PSU, 2010) and referenced in the Washington Department of Ecology's February 2010 Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load (TMDL - WDOE, 2010). The analysis supports Post Falls receiving a 3.19 ppd WLA based on a seasonal average with daily phosphorus testing.

Post Falls engaged J.P. Stravens in 2007 to look very carefully at where their boundaries and obligations will take them for the next 20 years. Stravens determined that Post Falls' Area of City Impact (ACI) will grow from 33,860 to 69,732 people by 2028 (Stravens, 2007).

The City of Rathdrum also discharges 100% of their wastewater to the Post Falls Water Reclamation Facility (WRF). Rathdrum believes that it is reasonable and prudent to include the March 2009 growth numbers projected by the Kootenai Metropolitan Planning Organization (KMPO, 2009) for planning their municipal boundaries and service obligations out to 2030. Rathdrum would grow from 7,173 to 14,118 people during that time. The results show that, even at less than 3.5% annual population growth (which is well below historical rates for the last 20 years) the combined city service areas will have 83,850 people by 2030.

All of the recent planning documents utilize a wastewater flow generation rate of 73 gallons per capita per day (gpcd) for both Rathdrum and Post Falls, including the 2009 Rathdrum Prairie Wastewater Master Plan (JUB, 2009). It is important to realize that these flow generation values DO NOT include the wastewater generated each day by commercial, industrial and municipal land uses. Rather than utilizing different commercial/industrial flow planning values for your communities, it is reasonable and prudent to employ the same additive factor of 25% of residential flow that Spokane County utilized to account for those land uses in their 2007 Facility Plan (Spokane County, 2007).

Cumulatively, the population and flow factors will create a 2030 flow rate for the Post Fall WRF of 7.65 mgd (83,850 people x 73 gpcd x 1.25). The 2010 TMDL accounted for only 5.0 mgd because that is the capacity of the current expansion that the City submitted - believing that all other entities were using a similar approach.

It is important to note that Post Falls is NOT allowing any increase in its flow projection to account for infiltration and inflow (I/I). While you can document conditions which create I/I, Post Falls' sewer system has been constructed in the last 25 years and you have never considered significant I/I to be a legitimate condition in modern construction, operation or maintenance of a sewer collection system. This is an important distinction since all total phosphorus allocations in the TMDL are based on projected flow rates rather than whether their origin is groundwater or stormwater as compared to wastewater.

As acknowledged by Appendix L as well as numerous comments to the TMDL, Post Falls and other municipal entities along the Spokane River have supported and/or performed significant research, pilot testing and application of the best phosphorus treatment technology available in the world. The conclusion is that a seasonal average or median value of 50 ug/L total phosphorus is an appropriate technologically achievable limit. Therefore, Post Falls is justified in requesting a seasonal average WLA of 3.19 pounds of total phosphorus per day in the revision to the February 2010 Total Maximum Daily Load Water Quality Improvement Report (7.65 mgd x 0.050 ppm x 8.34 pounds per gallon). This is a reasonable and prudent waste load allocation rather than the currently allocated 1.5 ppd.

J-U-B ENGINEERS, Inc., Rathdrum Prairie Wastewater Master Plan - Final, April 2009, http://www.postfallsidaho.org/pzdept/Rathdrum%20Prairie%20Waste%20Water%20Plan%20Exec%20Summary.pdf

Kootenai Metropolitan Planning Organization, KMPO Growth Projections, March 5, 2009, http://www.kmpo.net/Data_Publications/KMPO%20Board%20Approved%20Growth%20Projections%203-5-09.pdf

Portland State University, Spokane River Modeling Final Scenarios Report, January 29, 2010, http://www.ecy.wa.gov/programs/wq/tmdl/spokaneriver/dissolved_oxygen/FinalSpokRvrScenariosRpt092009.pdf

Spokane County, Wastewater Facilities Plan - Final, December, 17, 2007, http://www.spokanecounty.org/utilities/rptdoc/2008jan/02-02%20Basis%20of%20Planning%20Summary.pdf

Stravens, J.P. Planning Associates, Inc., Demographic Analysis & Growth Projections for City of Post Falls, ID, January 2, 2007, http://www.postfallsidaho.org/city_info/misc%20docs/Demographiics_GrowthReport.pdf

Washington Department of Ecology, Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load , February 2010, http://www.ecy.wa.gov/pubs/0710073.pdf